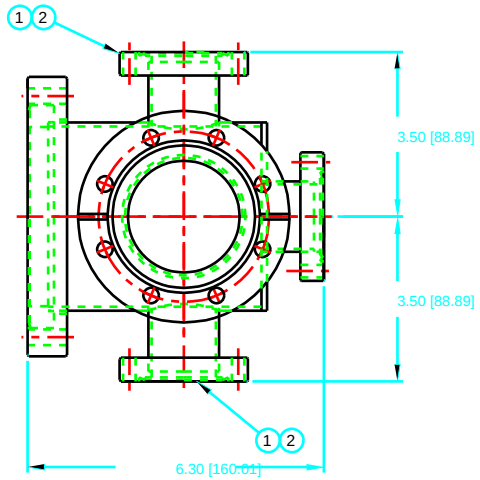

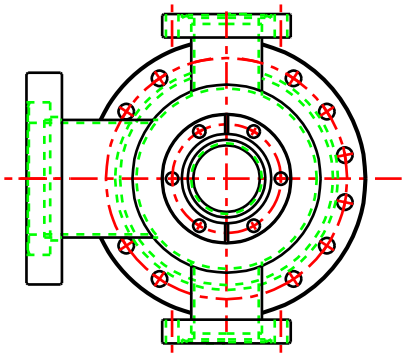

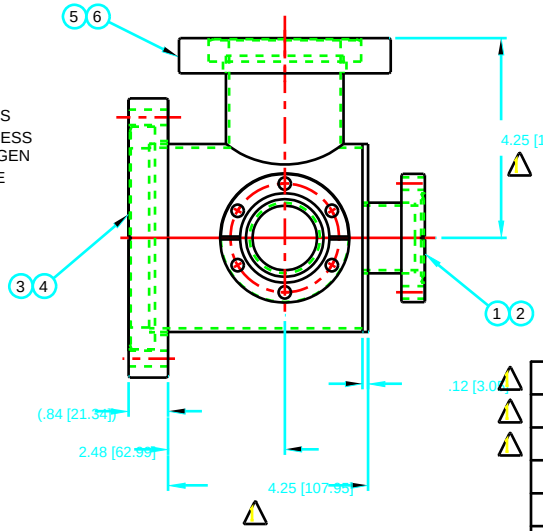

NOTES:

1. THIS IS A ULTRA - HIGH VACUUM CHAMBER (UHV)
2. WHEN MACHINING VACUUM PARTS, USE OF SILICONE AND SULPHUR-BASED CUTTING FLUIDS IS PROHIBITED. USE ONE OF THE FOLLOWING:
   - A) CIMCOOL 5 STAR 49
   - B) TRIM SOL
3. ELECTROPOLISHING IS NEEDED BEFORE WELDING. PRIOR TO ELECTROPOLISHING, THE CHAMBER NEEDS TO GO THROUGH A MULTIPLE STEP CLEANING PROCESS INVOLVING DEGREASING, WASHING AND DRY NITROGEN BLOW DOWN. THE CHAMBER VACUUM SIDE SURFACE ROUGHNESS SHALL BE BETTER THAN 63 MICROINCH
4. WELDS SHALL BE GAS TUNGSTEN ARC (GTAW) OR TUNGSTEN INERT GAS (TIG) ON VACUUM SIDE OF JOINTS.
5. VACUUM CHAMBER SHALL BE LEAK TESTED USING A MASS SPECTROMETER WITH MINIMUM SENSITIVITY FOR HELIUM OF 2X 10 -10 STANDARD CC/SEC PER LEAK METER DIVISION, SUCH AS:
   - ALCATEL ASM-11OTCL
   - VARIAN NCR 925 OR 936
   - VEECO MS-9, MS-90 OR MS-18
   - Du PONT CEC 24-120B

   CALIBRATION OF THE LEAK DETECTOR SENSITIVITY SHALL BE PERFORMED JUST PRIOR TO TESTING.

   FINAL TEST WILL CONSIST OF SURROUNDING THE CHAMBER (BAGGING) WITH HELIUM. THE CHAMBER WILL BE REJECTED IF A 2% DEFLECTION IN THE MOST SENSITIVE RANGE OF THE LEAK DETECTOR IS SENSED WITHIN 1 MIN.
6. DIMENSIONS IN [ ] ARE MILLIMETERS AND FOR REF. ONLY

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
6		2.50" O.D. X .065 WALL TUBING	SST	AS REQ'D.
5	#100021	4 1/2" O.D. ROTATABLE VACUUM FLANGE	SST	1
4		4.00"O.D. X .083 WALL TUBING	304 SST	AS REQ'D.
3	#100026	6" O.D. ROTATABLE VACUUM FLANGE	SST	1
2		1.50" O.D. X .065 WALL TUBING	304 SST	AS REQ'D.
1	#110014	2 3/4" O.D. NONROTATABLE VACUUM FLANGE	SST	3

PARTS LIST

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
1	4.25 [107.95] WAS 3.98 [101.09]			
	4.25 [107.95] WAS 3.88 [98.55]			
	.083 WALL WAS .065 WALL			
	#100021 WAS #100017			
	2.50 O.D. WAS 2.00 O.D.	M.J.M.	J.C.	2/10/98

REVISIONS

UNLESS OTHERWISE SPECIFIED NUMBER ALL DIMENSIONS ARE IN INCHES
TOLERANCES
DECIMALS ANGULAR
.X ± .1 [2.5] ± 0°30"
.XX ± .01 [0.25]
.XXX ± .005 [0.13]
SURFACE ROUGHNESS 125
REMOVE ALL BURRS AND BREAK SHARP EDGES .02 MAX.
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5
DO NOT SCALE DRAWING

L5900200-01

THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY

DRAWN BY: MUSCIA	DATE: 7/25/97	CHIEF DESIGN ENGINEER: D. Shu	DATE: 8/24/97
CHECKED BY: D. SHU	8/24/97	GP LEADER: T.M. Kuzay	8/25/97
DESIGNER: SHU/MUSCIA	7/25/97	PROJECT MGR.	
RESPONSIBLE ENGINEER: D. SHU	8/24/97	APPROVED/RELEASED	

TITLE: ADVANCED PHOTON SOURCE
L5-90 WELDMENT
CHAMBER ASSEMBLY

MATERIAL: SEE PARTS LIST
SCALE: HALF
SHEET 1 1
SIZE: C
DRAWING NUMBER: L5-900200-01